WHAT IS CLAIMED IS:

1. A data input device for use with a tracking surface, said tracking surface having light-scattering properties with respect to said device, said device comprising:

a single laser having a cavity from which a light beam is projected, said laser being configured to project the light beam onto said tracking surface, at least a portion of the light beam striking said tracking surface reflecting back into the cavity of said laser and thereby altering at least one characteristic of the projected light beam;

a detector associated with the laser for detecting said altered characteristic of the light beam projected by the laser; and

a controller responsive to the detector for determining the relative distance between said device and said tracking surface as a function of the altered characteristic of the projected light beam detected by the detector.

2. A device as set forth in claim 1 wherein said at least one altered characteristic is a frequency shift in the projected light beam of the laser.

3. A device as set forth in claim 2 wherein a Doppler waveform of said projected light beam having at least one altered characteristic has a frequency proportional to the speed of any relative displacement between the tracking surface and the device.

4. A device as set forth in claim 2 wherein a Doppler waveform of said projected light beam having at least one altered characteristic has an asymmetrical waveform indicating the direction of movement of the tracking surface and the device relative one another.

5. A device as set forth in claim 4 wherein a Doppler waveform of said projected light beam having at least one altered characteristic has a rise time longer than its fall time, indicating that the tracking surface and device are moving relatively toward one another.

6. A device as set forth in claim 4 wherein a Doppler waveform of said projected light beam having at least one altered characteristic has a rise time shorter than its fall time, indicating that the tracking surface and device are moving relatively away from one another.

7. A device as set forth in claim 1 wherein said at least one altered characteristic is a modulation of power output of the projected light beam of the laser.

8. A device as set forth in claim 7 wherein a Doppler waveform of said projected light beam having at least one altered characteristic has an amplitude proportional to the amount of light received by the detector.

9. A device as set forth in claim 1 further comprising a housing, said single laser and detector mounted on said housing.

10. A device as set forth in claim 9 wherein said housing is adapted to contact said tracking surface.

11. A device as set forth in claim 9 wherein said laser and said detector are mounted adjacent each other on at least one of a micro-chip, a printed circuit board (PCB) and a leadframe.

12. A device as set forth in claim 1 wherein the laser draws less than about 1.0 mW (1.3 μhorsepower).

13. A device as set forth in claim 1 wherein said laser is a solid-state device.

14. A device as set forth in claim 14 wherein said laser is at least one of a vertical cavity surface emitting laser (VCSEL) and an edge-emitting laser (EEL).

15. A device as set forth in claim 1 wherein said tracking surface is human skin.

16. A device as set forth in claim 1 wherein the detector associated with the laser monitors the intensity of the laser.

17. A device as set forth in claim 1 further comprising an optic positioned between the laser and the tracking surface for refracting the light beam between the tracking surface and the laser.

18. A data input device for use with a tracking surface, said tracking surface having light-scattering properties with respect to said device, said device comprising:

a laser having a cavity from which a light beam is projected, said laser being configured to project the light beam onto said tracking surface, said light beam oriented substantially perpendicular to said tracking surface when said device is operating in a tracking mode, at least a portion of the light beam striking said tracking surface reflecting back into the cavity of said laser and thereby altering at least one characteristic of the projected light beam;

a detector associated with the laser for detecting said altered characteristic of the light beam projected by the laser; and

a controller responsive to the detector for determining the relative distance between said device and said tracking surface as a function of the altered characteristic of the projected light beam detected by the detector.

19. A device as set forth in claim 18 wherein said at least one altered characteristic is a frequency shift in the light beam projected by the laser.

20. A device as set forth in claim 18 wherein said at least one altered characteristic is a modulation of power output of the light beam projected by the laser.

21. A device as set forth in claim 18 further comprising a housing, said laser and detector mounted on said housing.

22. A device as set forth in claim 21 wherein said housing is adapted to contact said tracking surface and orient said laser with respect to said tracking surface.

23. A device as set forth in claim 18 wherein said tracking surface is human skin.

24. A method comprising:

projecting a light beam onto a tracking surface from a laser having a laser cavity, wherein a data input device includes said laser and laser cavity;

receiving at least a portion of the light reflected by the tracking surface within the laser cavity;

mixing said received reflected light with light generated within said laser cavity, said mixing thereby altering at least one characteristic of said projected light beam;

projecting a light beam with said at least one altered characteristic from said laser cavity;

detecting said at least one altered characteristic of the light beam; and

determining the relative distance between said device and said tracking surface as a function of the at least one altered characteristic of the projected light beam.

25. The method as set forth in claim 24 further comprising altering data output of the data input device as a function of the determined relative distance.

26. The method as set forth in claim 24 wherein said projected light beam is reflected from a reference surface prior to said detecting.

27. The method as set forth in claim 26 wherein said reference surface is mounted on said data input device.

28. The method as set forth in claim 27 wherein said reference surface is a housing of said data input device.

29. The method as set forth in claim 24 further comprising determining the speed of any relative displacement between the tracking surface and the device.

30. The method as set forth in claim 29 further comprising altering the data output of the data input device as a function of the speed.

31. The method as set forth in claim 24 wherein said detected at least one altered characteristic of the light beam is frequency.

32. The method as set forth in claim 24 wherein said detected at least one altered characteristic of the light beam is light intensity.

33. The method as set forth in claim 24 further comprising comparing said relative distance between said device and said tracking surface to a lift-off detection distance and altering the data output of the data input device as a function of the comparison.

34. The method as set forth in claim 33 further comprising (i) suspending tracking of relative movement between said device and said tracking surface when said device is spatially separated from said tracking surface by at least the lift-off detection distance and (ii) maintaining tracking of relative movement between said device and said tracking surface when said device is spatially separated from said tracking surface by less than said lift-off detection distance.

35. The method as set forth in claim 33 wherein said lift-off detection distance is no more than about 4 millimeters (0.16 inch).

36. The method as set forth in claim 35 wherein said lift-off detection distance is no more than about 4 millimeters (0.16 inch) and at least about 0.5 millimeter (0.02 inch).

37. The method as set forth in claim 36 wherein said lift-off detection distance is no more than about 3 millimeters (0.12 inch) and at least about 0.5 millimeter (0.02 inch).

38. A data input device for use with a tracking surface, said device comprising:

a single laser having a cavity from which a light beam is projected, said laser being configured to project the light beam onto said tracking surface, at least a portion of the light beam striking said tracking surface reflecting back into the cavity of said laser and thereby altering at least one characteristic of the projected light beam;

a detector associated with the laser for detecting said at least one altered characteristic of the light beam projected by the laser; and

a controller responsive to the detector for operating the device in a tracking mode or a non-tracking mode depending upon said at least one altered characteristic of the projected light beam.

39. A device as set forth in claim 38 wherein said at least one altered characteristic is a frequency shift in the projected light beam of the laser.

40. A device as set forth in claim 38 wherein said at least one altered characteristic is a modulation of power output of the projected light beam of the laser.